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Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
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EXAMINER	
MATTIS, JASON E	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/848,937	WALTON, JAY R.	
	Examiner	Art Unit	
	Jason E. Mattis	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10,11,13-18 and 20-37* is/are rejected.

7)☒ Claim(s) *9, 12, and 19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the Amendment filed on 8/23/04. The filing of the terminal disclaimer and the addition of inventors are noted.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-7, 10-11, 13-15, and 29-35 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al. (U.S. Pat. 5923650).

With respect to claim 1, Chen et al. discloses a method for control transmissions on an uplink in a communication system **(See the abstract of Chen et al. for reference to controlling uplink transmissions in a communication system)**. Chen et al. also discloses determining one or more characteristics of the communication system **(See column 9 line 43 to column 10 line 5 and Figure 7 of Chen et al. for reference to collecting information necessary for the scheduling of communication channels)**. Chen et al. further discloses partitioning available system resources into a plurality of channels **(See column 6 lines 15-33 of Chen et al. for reference to using CDMA, meaning the system resources are partitioned into**

channels based on codes according to CDMA). Chen et al. also discloses defining a plurality of back-off factors for the plurality of channels based at least in part on the one or more determined characteristics of the communication system wherein each channel is associated with a respective back-off factor that identifies a reduction from peak transmit power level with each back-off factor ranging from zero to one **(See column 17 line 34 to column 18 line 62 of Chen et al. for reference to the power control system that includes a back-off fraction α that represents a fraction, which is a number between zero and one, for reduction from peak power)**. Chen et al. further discloses assigning the plurality of channels to terminals for data transmission at power levels determined based at least in part on the plurality of back-off factors **(See column 8 line 61 to column 9 line 16 of Chen et al. for reference to scheduling channels to users at power levels based on the back-off factors)**.

With respect to claim 2, Chen et al. discloses that the one or more determined characteristics include characterization of interference on the plurality of channels **(See column 17 line 35-45 of Chen et al. for reference to determining transmit power based on interference)**.

With respect to claim 3, Chen et al. disclose that the one or more determined characteristics include loading probabilities for the communication system **(See column 19 line 59 to column 20 line 18 of Chen et al. for reference to determining transmit power based on loading of the system)**.

With respect to claim 4, Chen et al. discloses that the plurality of back-off factors are defined to approximately match the one or more determined characteristics

of the communication system **(See column 17 line 34 to column 18 line 62 of Chen et al. for reference to the transmit power of each channel being determined based on measured characteristics)**.

With respect to claim 5, Chen et al. discloses that the plurality of back-off factors are defined to approximately match C/I characterization of terminals in the communication system **(See column 17 line 35-45 of Chen et al. for reference to determining transmit power based on interference)**.

With respect to claim 6, Chen et al. discloses that the plurality of back-off factors are defined based in part on one or more set-points selected for the plurality of channels with the set-points corresponding to a C/I required for a particular level of performance **(See column 17 line 34 to column 18 line 62 of Chen et al. for reference to determining the transmit power in 1 dB increments that are adjusted to meet a 1% frame error rate corresponding to interference)**.

With respect to claim 7, Chen et al. discloses that the one or more set-points are determined base in part on data rates of data transmission on the plurality of channels **(See column 17 line 34 to column 18 line 62 of Chen et al. for reference to determining the transmit power based in part on prior and scheduled transmission rates)**.

With respect to claim 10, Chen et al. discloses adaptively adjusting the plurality of back-off factors to reflect changes in the communication system **(See column 17 line 34 to column 18 line 62 of Chen et al. for reference to dynamically determining the**

transmission power based on changes in the characteristics of the communication system).

With respect to claim 11, Chen et al. discloses reducing one or more of the back-off factors for a particular time duration to reduce interference on the associated channels **(See column 17 line 34 to column 18 line 62 of Chen et al. for reference to reducing transmission powers to reduce interference)**.

With respect to claims 13-15, Chen et al. discloses using TDM, FDM, or CDM **(See column 23 lines 15-26 of Chen et al. for reference to the invention being applicable to CDMA, TDMA, or FDMA)**.

With respect to claim 29, Chen et al. discloses a method for scheduling a plurality of terminals for data transmission on an uplink in a communication system **(See the abstract of Chen et al. for reference to scheduling uplink transmissions in a communication system)**. Chen et al. also discloses receiving a first set of parameters to be used for scheduling terminals **(See column 9 line 43 to column 10 line 5 and Figure 7 of Chen et al. for reference to collecting information necessary for the scheduling of communication channels)**. Chen et al. further discloses prioritizing terminals to be considered for scheduling **(See column 32 lines 38-48 of Chen et al. for reference to prioritizing remote stations)**. Chen et al. also discloses scheduling and assigning a channel to the terminals based on priority **(See column 32 lines 38-48 of Chen et al. for reference to scheduling and assigning channels based on priority)**. Chen et al. further discloses updating a second set of parameters used for controlling transmissions by the scheduled terminals **(See column 16 lines 22-56 and**

Figure 9 of Chen et al. for reference to updating parameters in step 258). Chen et al. also discloses receiving one or more transmissions from the terminals on assigned channels **(See column 8 line 61 to column 9 line 16 of Chen et al. for reference to receiving transmission from assigned terminals).**

With respect to claim 30, Chen et al. discloses that the first set of parameters includes interference characterization of each cell **(See column 17 line 35-45 of Chen et al. for reference to determining transmit power based on interference).**

With respect to claim 31, Chen et al. discloses that each scheduled terminal is assigned a channel based on priority of the terminal **(See column 32 lines 38-48 of Chen et al. for reference to scheduling and assigning channels for terminals based on priority).**

With respect to claim 32, Chen et al. discloses that each scheduled terminal is assigned a channel based on load requirements **(See column 19 line 59 to column 20 line 18 of Chen et al. for reference to assigning channels based on loading of the system).**

With respect to claim 33, Chen et al. discloses a method for scheduling a plurality of terminals for data transmission on an uplink in a communication system **(See the abstract of Chen et al. for reference to scheduling uplink transmissions in a communication system).** Chen et al. also discloses prioritizing terminals **(See column 32 lines 38-48 of Chen et al. for reference to prioritizing remote stations).** Chen et al. further discloses computing a channel metric for each channel **(See column 9 line 43 to column 10 line 5 and Figure 7 of Chen et al. for reference to collecting**

information necessary for the scheduling of communication channels). Chen et al. also discloses assigning terminals to channels based on priorities and channel metrics **(See column 8 line 61 to column 9 line 16 of Chen et al. for reference to assigning channels to terminals based on the priorities and channel metrics)**. Chen et al. further discloses selecting a terminal having a highest priority and assigning it to a channel have a least favorable channel metric but meeting requirements of the terminal **(See column 16 lines 22-56 and Figure 9 of Chen et al. for reference to selecting the highest priority terminal and assigning it a channel with a transmission rate that meets the maximum transmission requirements of the terminal in steps 248-252)**. Chen et al. also discloses successively assigning remaining terminals in order of priority **(See column 16 lines 22-56 and Figure 9 of Chen et al. for reference to successively assigning all terminals in decreasing order of priority)**. Chen et al. also discloses receiving transmissions from the scheduled terminals on assigned channels **(See column 8 line 61 to column 9 line 16 of Chen et al. for reference to receiving transmission from assigned terminals)**.

With respect to claim 34, Chen et al. discloses upgrading one or more terminals to unassigned channels having more favorable channel metrics **(See column 17 lines 23-33 of Chen et al. for reference to assigning a user a channel with a higher transmission rate)**.

With respect to claim 35, Chen et al. discloses selecting a terminal having the highest priority, selecting a channel having a most favorable channel metric, and reassigning the terminal to the selected channel **(See column 16 lines 5-56 and**

Figure 9 of Chen et al. for reference to selecting the highest priority terminal and assigning it to a channel having the maximum transmission rate).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. in view of Flammer (U.S. Pat. 5465398).

With respect to claim 8, Chen et al. does not disclose estimating a link margin for each channel and adjusting the plurality of back-off factors based on the estimated link margin.

With respect to claim 8, Flammer, in the field of communications discloses estimating link margins and adjusting power levels based on the link margins **(See that abstract and Figures 2-3 of Flammer for reference to estimating link margins and using the margins to change source node power levels)**. Estimating link margins and adjusting power levels based on the link margins has the advantage of allowing transmission power levels to be dynamically updated such that the optimal link margin is always maintained.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Flammer, to combine estimating link margins and adjusting power levels based on the link margins, as suggested by Flammer, with the system and method of Chen et al., with the motivation being to allow transmission power levels to be dynamically updated such that the optimal link margin is always maintained.

6. Claims 16-18, 20, 23 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. in view of Dent (U.S. Pat. 5844894).

With respect to claim 16, Chen et al. discloses a method for controlling transmission on an uplink in a communication system **(See the abstract of Chen et al. for reference to controlling uplink transmissions in a communication system)**. Chen et al. also discloses determining one or more characteristics of the communication system **(See column 9 line 43 to column 10 line 5 and Figure 7 of Chen et al. for reference to collecting information necessary for the scheduling of communication channels)**. Chen et al. further discloses partitioning available system resources into a plurality of channels **(See column 6 lines 15-33 of Chen et al. for reference to using CDMA, meaning the system resources are partitioned into channels based on codes according to CDMA)**. Chen et al. also discloses defining a plurality of back-off factors for the plurality of channels based at least in part on the one or more determined characteristics of the communication system wherein each channel is associated with a respective back-off factor that identifies a reduction from peak

transmit power level with each back-off factor ranging from zero to one **(See column 17 line 34 to column 18 line 62 of Chen et al. for reference to the power control system that includes a back-off fraction α that represents a fraction, which is a number between zero and one, for reduction from peak power)**. Chen et al. further discloses assigning the plurality of channels to terminals for data transmission at power levels determined based at least in part on the plurality of back-off factors **(See column 8 line 61 to column 9 line 16 of Chen et al. for reference to scheduling channels to users at power levels based on the back-off factors)**. Chen et al. does not specifically disclose defining a reuse pattern for the communication wherein the reuse pattern includes a plurality of cells.

With respect to claim 23, Chen et al. discloses a method for operating an uplink of a wireless communication system **(See the abstract of Chen et al. for reference to controlling uplink transmissions in a communication system)**. Chen et al. also discloses determining one or more characteristics of the communication system **(See column 9 line 43 to column 10 line 5 and Figure 7 of Chen et al. for reference to collecting information necessary for the scheduling of communication channels)**. Chen et al. further discloses partitioning available system resources into a plurality of channels **(See column 6 lines 15-33 of Chen et al. for reference to using CDMA, meaning the system resources are partitioned into channels based on codes according to CDMA)**. Chen et al. further discloses allocating channels based on the determined characteristics **(See column 8 line 61 to column 9 line 16 of Chen et al. for reference to scheduling channels based on channel characteristics)**. Chen et

al. also discloses repeating the determining and allocating to reference changes in the communication system **(See column 15 lines 14-36 of Chen et al. for reference to reallocating scheduled channels each frame to reflect changes in the communication system)**. Chen et al. does not specifically disclose defining a reuse pattern for the communication wherein the reuse pattern includes a plurality of cells.

With respect to claim 16, Dent, in the field of communications, discloses defining a reuse pattern wherein the reuse pattern includes a plurality of cells **(See column 6 line 61 to column 7 line 6 of Dent for reference to defining a reuse pattern in a system including a plurality of cells)**. Defining a reuse pattern wherein the reuse pattern includes a plurality of cells has the advantage of reducing interference between adjacent cells.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Dent, to combine defining a reuse pattern wherein the reuse pattern includes a plurality of cells, as suggested by Dent, with the system and method of Chen et al., with the motivation being to reduce interference between adjacent cells.

With respect to claims 17-18, Chen et al. discloses that the one or more determined characteristics include characterization of interference on the plurality of channels with back-off factors defined based in part on the interference characterization **(See column 17 line 35-45 of Chen et al. for reference to determining transmit power based on interference)**.

With respect to claim 20, Chen et al. discloses adjusting back-off factors for each cell to reduce co-channel interference **(See column 17 line 35-45 of Chen et al. for reference to adjusting transmit power to reduce interference)**.

With respect to claim 25, Chen et al. discloses that the channels allocated to each cell are determined based on loading conditions **(See column 19 line 59 to column 20 line 18 of Chen et al. for reference to determining channel allocation based on loading of the system)**.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. in view of Dent as applied to claims 16-18, 20, 23 and 25 above, and further in view of Flammer.

With respect to claim 21, the combination of Chen et al. and Dent does not disclose estimating a link margin for each channel and adjusting the plurality of back-off factors based on the estimated link margin.

With respect to claim 21, Flammer, in the field of communications discloses estimating link margins and adjusting power levels based on the link margins **(See that abstract and Figures 2-3 of Flammer for reference to estimating link margins and using the margins to change source node power levels)**. Estimating link margins and adjusting power levels based on the link margins has the advantage of allowing transmission power levels to be dynamically updated such that the optimal link margin is always maintained.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Flammer, to combine estimating link margins and adjusting power levels based on the link margins, as suggested by Flammer, with the system and method of Chen et al. and Dent, with the motivation being to allow transmission power levels to be dynamically updated such that the optimal link margin is always maintained.

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. in view of Dent as applied to claims 16-18, 20, 23 and 25 above, and further in view of Meidan (U.S. Pat. 5276907).

With respect to claim 22, the combination of Chen et al. and Dent does not disclose receiving requests from a neighbor cells to reduce a back-off factor and reducing the back-off factor in accordance with the requests.

With respect to claim 22, Meidan, in the field of communications, discloses receiving requests from a neighbor cells to reduce power and reducing the power in accordance with the requests **(See column 7 line 56 to column 8 line 31 of Meidan for reference to a cell receiving a request from an adjacent cell to reduce power and the cell reducing power in accordance with the request)**. Receiving requests from a neighbor cells to reduce power and reducing the power in accordance with the requests has the advantage of allowing cells to actively control interference during operation by requesting that interfering cells reduce transmission power levels.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Meidan, to combine receiving requests from a neighbor cells to reduce power and reducing the power in accordance with the requests, as suggested by Meidan, with the system and method of Chen et al. and Dent, with the motivation being to allow cells to actively control interference during operation by requesting that interfering cells reduce transmission power levels.

9. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. in view of Dent as applied to claims 16-18, 20, 23 and 25 above, and further in view of Bonta (U.S. Pat. 4696027).

With respect to claim 24, the combination of Chen et al. and Dent does not disclose one or more channels available for transmission at full power level and one or more channels available fro transmission at reduced power levels.

With respect to claim 24, Bonta, in the field of communications, discloses cells having channels at both full power and at reduced power **(See column 2 lines 24-44 of Bonta for reference to having cells with channels at full power and channels at reduced power levels)**. Having channels at both full power and at reduced power has the advantage of providing better interference control by allowing adjacent cells using similar channels to reduce co-channel interference by reducing transmit power levels.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Bonta, to combine having channels at both full power and at reduced power, as suggested by Bonta, with the system and method

of Chen et al. and Dent, with the motivation being to provide better interference control by allowing adjacent cells using similar channels to reduce co-channel interference by reducing transmit power levels.

10. Claims 26-27 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Barany et al. (U.S. Pat. 6256486).

With respect to claim 26, Dent discloses a method for operating an uplink in a communication system **(See the abstract of Dent for reference to allocating channels for transmissions in a communication system)**. Dent also discloses defining a reuse scheme to be used for data transmission by a plurality of terminals wherein the reuse scheme identifies a particular reuse pattern, an initial allocation of available system resources, and a set of operating parameters **(See column 6 line 61 to column 7 line 17 of Dent for reference to defining a reuse pattern that includes a pattern, an initial allocation of resources and operating parameters)**. Dent further discloses scheduling terminals for data transmission **(See column 7 lines 38-51 of Dent for reference to scheduling radiotelephones for data transmission)**. Dent also discloses receiving transmission from scheduled terminals **(See column 9 liens 7-22 of Dent for reference to receiving communication signals from scheduled radiotelephones)**. Dent does not disclose evaluating system performance, determining if the performance is within a threshold, and redefining the reuse scheme if the performance is not within the thresholds.

With respect to claim 26, Barany et al., in the field of communications, discloses evaluating system performance, determining if the performance is within a threshold, and redefining the reuse scheme if the performance is not within the thresholds **(See column 11 lines 40-57 of Barany et al. for reference to changing a reuse scheme if it is determined that the current reuse scheme does not meet an acceptable level of co-channel interference)**. Evaluating system performance, determining if the performance is within a threshold, and redefining the reuse scheme if the performance is not within the thresholds has the advantage of allowing a system to adapt to changing environments in order to reduce interference and improve performance.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Barany et al., to combine evaluating system performance, determining if the performance is within a threshold, and redefining the reuse scheme if the performance is not within the thresholds, as suggested by Barany et al., with the system and method of Dent, with the motivation being to allow a system to adapt to changing environments in order to reduce interference and improve performance.

With respect to claim 27, Dent discloses developing characterization of interference received at each cell, partitioning the system resources into channels and allocating channels to each cell based on the interference characterization **(See column 7 lines 18-37 of Dent for reference to defining a reuse scheme based on co-channel interference)**.

With respect to claim 36, Dent discloses a base station in a communication system **(See column 6 lines 25-38 and Figure 3 of Dent for reference to base stations 310 in a communication system 300)**. Dent also discloses a resource allocation processor configured to receive data defining a reuse plan to be used for uplink data transmissions by a plurality of terminals with the reuse scheme identifying a particular reuse pattern, an initial allocation of available system resources, and a set of operating parameters **(See column 6 line 61 to column 7 line 17 of Dent for reference to defining a reuse pattern that includes a pattern, an initial allocation of resources and operating parameters)**. Dent further discloses the resource allocation processor also scheduling one or more terminals for data transmission and assigning a channel to each scheduled terminal **(See column 7 lines 38-51 of Dent for reference to scheduling radiotelephones for data transmission on assigned channels)**. Dent also discloses a processor configured to process one or more received signals from the terminals to provide received symbol streams **(See column 8 line 53 to column 9 line 23 of Dent for reference to base station 310 including a processing means to receive and process signals from radiotelephones)**. Dent does not disclose a processor configured to estimate one or more characteristics and the resource allocation processor scheduling terminals based on the characteristics.

With respect to claim 36, Barany et al., in the field of communications, discloses a processor configured to estimate characteristics for a cell and a processor scheduling terminals based on the characteristics **(See column 7 lines 36-40, column 8 lines 1-16, column 12 line 60 to column 13 line 14 and Figures 6 and 9 of Barany**

et al. for reference to a base station with a packet data traffic transceiver 27 measuring co-channel interference and using the measured interference to schedule terminals). A processor configured to estimate characteristics for a cell and a processor scheduling terminals based on the characteristics has the advantage of providing a system that can dynamically allocate system resources based on a changing environment.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Barany et al., to combine a processor configured to estimate characteristics for a cell and a processor scheduling terminals based on the characteristics, as suggested by Barany et al., with the system and method of Dent, with the motivation being to provide a system that can dynamically allocate system resources based on a changing environment.

11. Claims 28 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dent in view of Barany et al. as applied to claims 26-27 and 36 above, and further in view of Chen et al.

With respect to claim 28, the combination of Dent an Barany et al. does not disclose defining a set of back-off factors to be associated with each allocated set of channels.

With respect to claim 37, Dent discloses that the allocated system resources comprise a plurality of channels (See column 6 lines 25-37 of Dent for reference to the system being a TDMA system, meaning resources comprise a plurality of time

channels). The combination of Dent and Barany et al. does not disclose determining a plurality of back-off factors based on channel state information.

With respect to claims 28 and 37, Chen et al., in the field of communications discloses defining back-off factors based on channel state information **(See column 17 line 34 to column 18 line 62 of Chen et al. for reference to a power control system that includes a back-off fraction α that represents a fraction, which is a number between zero and one, for reduction from peak power based on channel characteristics)**. Defining back-off factors based on channel state information has the advantage of providing power control of transmissions such that interference can be reduced.

It would have been obvious for one of ordinary skill in the art at the time of the invention, when presented with the work of Chen et al., to combine discloses defining back-off factors based on channel state information, as suggested by Chen et al., with the system and method of Dent and Barany et al., with the motivation being to provide power control of transmissions such that interference can be reduced.

Allowable Subject Matter

12. Claims 9, 12, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason E. Mattis whose telephone number is (571) 272-3154. The examiner can normally be reached on M-F 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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